

**【CLAIMS】****【Claim 1】**

An access control system, comprising:

5 a Virtual Secure Disk (VSD) image file module  
occupying a certain space of a hard disk in a file form;

a VSD drive for processing security-sensitive files  
within the VSD image file module;

10 an encryption and decryption module for encrypting  
and decrypting data input/output between the VSD image file  
module and the VSD drive;

a VSD file system module for allowing an operating  
system to recognize the VSD drive as a separate disk volume  
at a time of access to the security-sensitive files within  
the VSD image file module; and

15 an access control module for determining access by  
determining whether an access location is a disk drive or  
the VSD drive and the application module has been  
authorized to access a certain file at a time of access to  
the file, which is stored on the hard disk, to perform  
20 tasks in the application module.

**【Claim 2】**

The access control system according to claim 1,  
wherein the access control module comprises:

25 an extended system service table for allowing the  
operation of a corresponding function to be performed when  
it is pointed at by a descriptor; and

an extended system table for changing a function,  
which is requested of the service system table by the  
application module, to prevent operation of the function,  
determining whether a space in which a corresponding task  
5 is performed is the disk drive or the VSD drive,  
determining whether access to the corresponding file by the  
application module has been authorized, and providing the  
unchanged function to the extended system service table or  
stopping the operation of the function according to results  
10 of the determination.

**【Claim 3】**

The access control system according to claim 1 or 2,  
wherein the VSD image file module virtually occupies the  
hard disk so as to allow the operating system to recognize  
15 the data as being assigned to a certain space of the hard  
disk without performing physical assignment for storing the  
data on the hard disk, so that the authorized application  
module can physically assign the data to the space.

**【Claim 4】**

20 An access control method, which is performed by an  
access control system having a hard disk, a disk drive, a  
file system module, an application module, a VSD image file  
module, a VSD drive, an encrypting/decrypting module, a VSD  
file system module, and a control access module including  
25 an extended system service table and an extended service

table, comprising the steps of:

(a) authorizing the application modules;

(b) the application module calling a function from an operating system to access a corresponding file;

5 (c) the operating system providing the function to the extended service table;

(d) changing the function into an arbitrarily designated function to prevent the operation of the function in the extended service table;

10 (e) determining whether the access space of the file is the disk drive or the VSD drive in the extended service table;

(f) returning the arbitrarily designated function to the original function whose operation is possible, and  
15 providing the original file to the extended system service table if it is determined that the access space is the disk drive at step (e);

(g) determining whether access to the application module has been authorized if it is determined that the  
20 access space is the disk drive at step (e);

(h) returning the arbitrarily designated function to the original function whose operation is possible, and providing the original function to the extended system service table if it is determined that the application  
25 module has been authorized at step (g); and

(i) stopping the operation of the corresponding function if it is determined that the application module

has not been authorized at step (g).

**【Claim 5】**

The application-based access control method according to claim 4, wherein, if the function is a function  
5 requesting a Write operation, the step (e) comprises the steps of:

determining whether the application module has been authorized;

stopping the operation of the function if it is  
10 determined the application module has been authorized; and

the arbitrarily designated function returning to the original function, the operation of which is possible, and being provided to the extended system service table if it is determined that the application module has been  
15 unauthorized.

**【Claim 6】**

The access control method according to claim 4 or 5, further comprising the step of the encryption and decryption module encrypting and decrypting data that are  
20 input and output between the VSD image file module and the VSD drive.